

CLAIMS

We claim:

1. A knock-on sweep assembly for a tillage implement sweep having a forward cutting edge, the assembly including a sweep support, a sweep mounting portion located rearwardly of the cutting edge and mating with the sweep support, the sweep mounting portion providing a tight but releasable fit when the sweep is in a mounted position on the sweep support, wherein the mounted position varies with tolerances in the sweep support and sweep mounting portion, and retaining structure for preventing the sweep from dismounting from the sweep support, the retaining structure including spaced contact areas on the sweep, a retainer biased towards the contact areas and abutting one of the contact areas, the abutted contact area dependent on the mounted position to limit sweep dismounting movement.

2. The sweep assembly as set forth in claim 1 wherein the sweep support includes a front side facing a back portion of the sweep mounting structure and the retainer is biased towards the back portion.

3. The sweep assembly as set forth in claim 2 wherein contact areas are integral with the back portion of the sweep support.

4. The sweep assembly as set forth in claim 1 wherein the sweep mounting portion includes structure providing a wedge fit between the sweep mounting portion and the sweep support, and wherein the spaced contact areas include a preliminary support area for maintaining the sweep on the sweep support in a temporary initial position offset from the mounted position, wherein forces operating on the sweep during implement operation move the sweep from the initial position into a wedge fit condition so that sweep mounting can be accomplished independently of use of impact tools.

5. The sweep assembly as set forth in claim 4 wherein the spaced contact areas comprise a stepped area integral with the sweep support.

6. The sweep assembly as set forth in claim 2 wherein the sweep support and the sweep mounting structure define an accommodation space for inserting a tool between the sweep support and sweep mounting structure to urge the retainer

against the bias and release the sweep from the mounted position.

7. The sweep assembly as set forth in claim 1 wherein the sweep mounting structure includes a raised portion at a location forwardly of the spaced contact areas to limit wear adjacent the spaced contact areas.

8. The sweep assembly as set forth in claim 2 wherein the back portion includes a blind channel area facing the retainer and the contact areas are formed within the channel area.

9. Retaining structure for a knock-on sweep assembly for a tillage implement sweep having a forward end and a sweep mounting portion located rearwardly of the forward end, the retaining structure including:

a wedge support adapted for mating with the sweep mounting portion and providing a tight but releasable wedged fit position, the wedge fit position dependent on tolerances between the wedge support and the sweep mounting position;

a retainer supported by the wedge support and biased into a locking position relative to the sweep to prevent movement of the sweep from the wedged fit position; and

wherein the sweep mounting portion includes spaced retainer-receiving locations to engage the retainer at different wedge fit positions.

10. The retaining structure as set forth in claim 9 wherein the retainer comprises a spring member having an end biased towards the spaced retainer-receiving locations.

11. The retaining structure as set forth in claim 10 wherein the spaced retainer-receiving portions comprise a stepped area on the mounting portion of the sweep.

12. The retaining structure as set forth in claim 9 wherein the retainer includes an end having a flat surface and the stepped area includes a plurality of spaced flats generally parallel to the flat surface.

13. The retaining structure as set forth in claim 10 wherein the retainer comprises a wire and the sweep includes a channel-shaped underside area supporting the wire to help the wire resist bending moments.

14. A knock-on sweep for a tillage implement including a mounting portion

for frictionally securing the sweep in a mounted position independently of fasteners on a tool support of a shank for forward movement through soil, wherein the mounted position is dependent upon manufacturing tolerances in the tool support and mounting portion, and a retainer-engaging area located in the mounting portion for receiving retaining structure to prevent the sweep from dislodging from the sweep support, wherein the retainer-engaging area comprises a plurality of one-way retaining positions, the retaining position being dependent on the mounted position.

15. The knock-on sweep set forth in claim 14 wherein the retainer-engaging area comprise an elongated portion on an underside of the mounting portion.

16. The knock-on sweep set forth in claim 14 wherein the retainer-engaging area comprise a stepped sweep portion defining a plurality of generally flat contact areas.

17. The knock-on sweep set forth in claim 14 wherein the retainer-engaging area comprises a stepped portion formed within a blind concave area on the underside of the mounting portion.

18. A knock-on sweep for a tillage implement including a mounting stem providing a generally fastenerless connection of the sweep in a mounted position on a tool support of a shank for forward movement through soil, wherein the mounted position varies dependent upon tolerances in the tool support and mounting portion, and a retainer-receiving area for engaging a retainer to prevent the sweep from dislodging from the sweep support, the retainer-receiving area including a one-way ratchet structure providing retention of the sweep at a location closely adjacent the mounted position so that travel of the retained sweep relative to the tool support remains small regardless of the tolerances between components.

19. The knock-on sweep set forth in claim 18 wherein the one-way ratchet structure comprises an elongated portion with spaced contact areas on an underside of the sweep.

20. The knock-on sweep set forth in claim 18 wherein the one-way ratchet structure comprise a stepped sweep portion defining a plurality of generally flat, spaced contact areas for receiving the retainer, the contact area receiving the retainer dependent on the mounted position.

21. The knock-on sweep set forth in claim 18 wherein the retainer-receiving area is formed within a blind concave underside area of the sweep.

22. The knock-on sweep set forth in claim 21 wherein underside area is located on the stem, and further including a raised area opposite the concave underside area for directing material away from the retainer-receiving area.

23. The knock-on sweep set forth in claim 18 wherein the one-way ratchet structure comprises a tab formed in the mounting stem.

24. A knock-on sweep for a tillage implement including a mounting stem providing a wedge fit connection of the sweep in a mounted position on a tool support of a shank for forward movement through soil, wherein the mounted position varies dependent upon tolerances in the tool support and mounting portion, and a retainer area for engaging mating retainer structure to limit movement of the sweep from the mounted position and prevent the sweep from dislodging from the sweep support, the retainer area including means for retaining the sweep in one of a plurality of retaining positions, the retaining position of the sweep dependent upon the mounted position to limit the movement of the sweep from the mounted position.

25. The knock-on sweep set forth in claim 24 wherein the means for retaining comprises one-way ratchet structure.

26. The knock-on sweep set forth in claim 24 wherein the retainer area comprises a plurality of retainer engaging areas located on an underside of the mounting stem.

27. The knock-on sweep set forth in claim 24 wherein the means for retaining includes a blind channel in the mounting stem.

28. The knock-on sweep set forth in claim 24 wherein the mounting stem is apertureless and the retainer area is located on an underside of the mounting stem.

29. The knock-on sweep set forth in claim 24 wherein the mounting stem includes a tool accommodation space for inserting a removal tool between the stem and the tool support.

30. The knock-on sweep set forth in claim 24 wherein the retainer area includes means facilitating hand-mounting of the sweep in a preliminary support position offset from the mounted position.